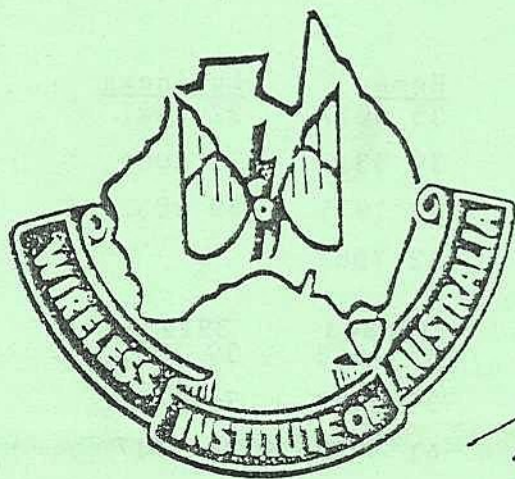
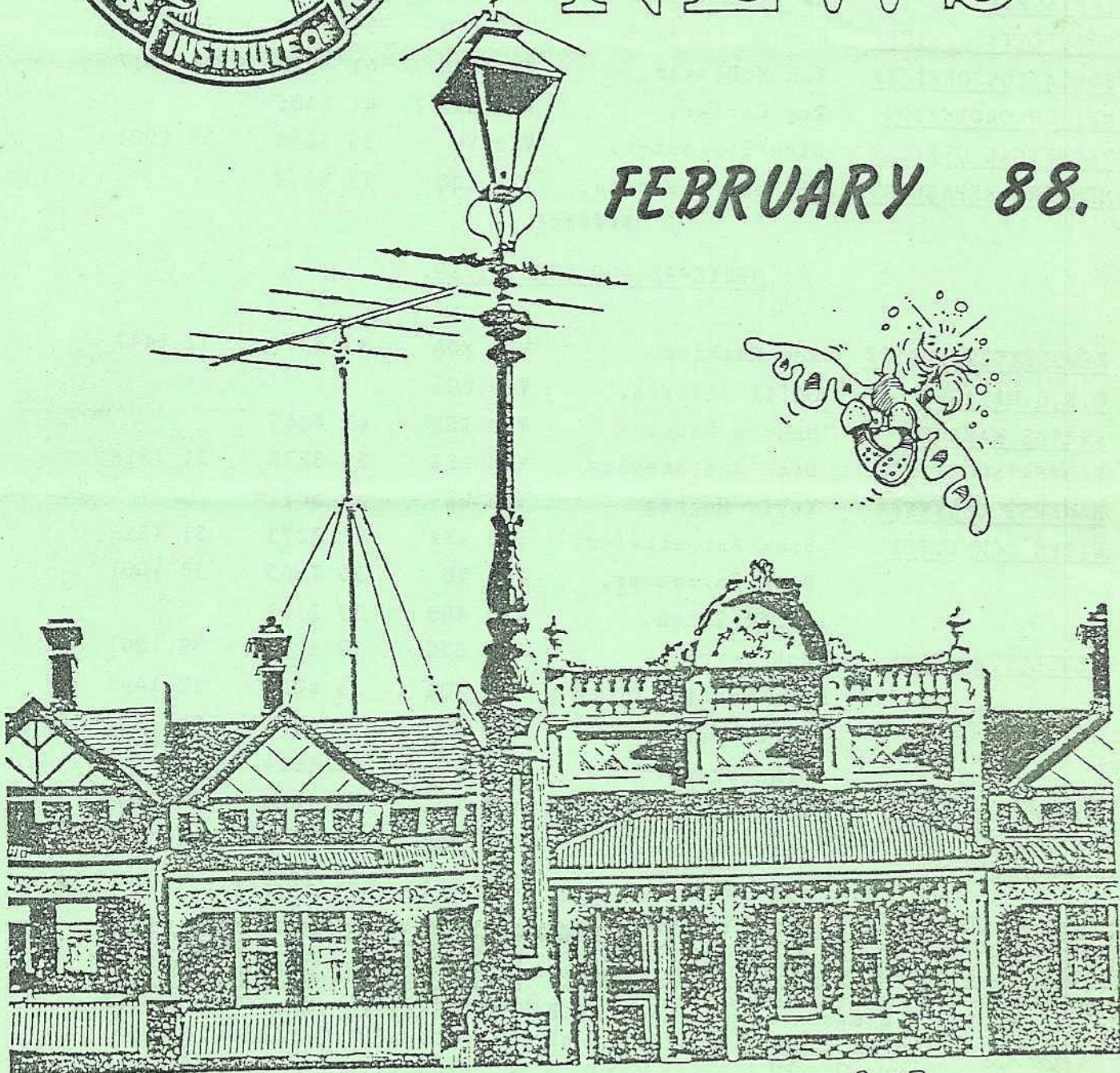


88/02



B·A·R·G NEWS

FEBRUARY 88.



© Monthly Newsletter of the
Ballarat Amateur Radio Group

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	John Brown.	VK3 CJB	39 1014.	
<u>TECHNICAL COMM.</u>	Dick Forrester.	VK3 VU	35 7663	39 1001
	Phil Seddon.	VK3 AQM	31 5220	31 3166
	Maurie Batt.	VK3 XEX	42 2245	

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B.A.R.G.meets on the LAST FRIDAY of every month except December at the Ballarat Education Centre, Hopetoun St, Ballarat. 7.30pm.

Committee meetings are held at the Education Centre on the Wednesday two weeks prior to the Club meeting at 7.30pm. Members of the Executive Committee are expected to attend and any Club Member with business for discussion is welcome.

All correspondence should be addressed to -
The Secretary, B.A.R.G.Inc, P.O.Box 216E, Ballarat East. 3350.

Applications for Awards to-Maurie Batt, R.S.D.Rokewood Junction. 3351.

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MINUTES OF GENERAL MEETING HELD 26th FEBRUARY.1988.

MEETING OPENED at 7.50pm by Vice President John VK3 CFH.

SILENT KEY, The members present observed a minutes silence as a mark of respect to our late brother amateur ERIC DAVID THOMAS who passed away on the 27th January 1988.

Vice Pres. John then welcomed the members and visitors present.

APOLOGIES. VK3 PGD, PFF, VU, KIT, WN, SE, NIZ.

MINUTES of previous meeting as circulated were confirmed. CAZ/PUW.

BUSINESS ARISING. BARG was rostered to conduct the Western Zone Net in February and we didn't. Our next turn is AUGUST.

CORRESPONDENCE In Ballarat Courier requesting communications for the Courier Classic Run on Sunday 6th March.
WIA Western Zone requesting details of running costs of repeaters and beacons in our area.

CORRESPONDENCE out. Cheque to Stev Gregory for purchase of Cavities.

TREASURERS REPORT. General a/c. \$346.58. VS&L a/c. \$2000.00.
Accounts amounting to \$45.82 passed for payment DOK/CAZ.

QSL MANAGER Jeff PAP reported that Bureau had been informed of change of manager, but had not received any cards as yet.

AWARDS No applications received.

EDUCATION OFFICER Ian AXH suggested that with the increasing interest in Packet Radio in the Club it would be a good idea to get together with the Ballarat computer group.
Ian BTX will make enquiries.

REPEATERS. Dick AEX reported that the antenna on RBA needs attention and RBS needs a tune up. Repeater committee are attending to this.

GENERAL BUSINESS Club will operate stations for John Moyle contest at site near Rokewood on 19th and 20th March.
Ian BTX warned that 'Packet with no hassles' article in ARA has a number of errors which could cause damage to computers.
Reg CAZ will give a talk on early days of Radar at our next meeting.

MEETING CLOSED at 8.55pm.

BRIAN VK3 KQB then gave a demonstration of ICOM communications equipment used in commercial communications. THANKS BRIAN.

Jim. VK3 CFB.

Next BARG meeting is on Friday 25th March.

Committee meeting on Wednesday 13th April.

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Q R N is not all bad (so they say)

Before the advent of meteorological satellites able to send back remarkably detailed 'photographs' taken in space showing cloud formations, frontal bands and weather systems, the Bureau of Meteorology used QRN in its 'Sferics' system to locate the position of frontal regions by monitoring the lightning discharges in the area and using DF techniques to obtain the bearing of the flash.

The equipment consisted of two very large rectangular loop aerials of 272 turns each mounted at exact right angles to each other and aligned N-S E-W. The two aerials were fed to two identical high gain amplifiers tuned to 10KHZ. Each stage of the amplifier was adjustable so that gain and phase shift of each amplifier stage could be matched. CRT the X and Y plates of which were positioned at exact right angles and also were equidistant from the gun so that the deflection sensitivity was identical for X and Y.

A separate vertical "sense" aerial was used to cancel one half cycle of the sinusoidal output from the amplifiers by blanking the CRT grid. The nett result was that a lightning flash would cause the CRT spot, normally resident at the centre of the screen and suppressed, to draw a line out to the edge of the CRT screen and the after-glow of the phosphor would permit the bearing of the flash to be ascertained.

Several of these Sferics units were used in a 'net' and one such used equipments located at Brisbane, Townsville, Charleville and Cloncurry as the Queensland 'net'. Control was at Brisbane where a forecaster would watch the screen and knowing the area he was interested in would call "Now" when a suitable lightning flash occurred. The other three stations would align their cursors over the flash afterglow and then in turn would "call in" their bearings to the control station over a conference telephone link-up. At the control station was a large Great Circle map with the stations located on it and from each location ran out a string long enough to reach the edge of the map. Round the edge ran a set of degree markings correct for each station in the net. As the bearings were called in the correct station's string was aligned using the appropriate bearing scale and where the strings crossed was the location of the flash. A flash could be located to within about 30 miles over a radius of up to about 2000 miles quite easily when experienced personnel were used to operate the system.

The Sferics unit itself was developed as a result of some early work carried out by Robert Watson-Watt (now Sir) the "father of radar". Back in the 1920-30s he was undertaking a study of QRN and he devised a fairly simple way of locating the area in which the QRN originated. His system was crude but effective. What he did was to obtain the script of a broadcast talk to be produced on the Overseas Service of the BBC and sent it to his helpers in the Middle East, Central Europe etc. When the broadcast took place his observers set with the script in front of them and followed the broadcast word for word. Whenever a "static crash" occurred they marked the appropriate word of the script with a symbol to indicate the intensity of the noise. After the broadcast they returned the script to Robert Watson-Watt in the UK where the results were compared.

Some considerable degree of success was achieved in pin-pointing an area of QRN and correlating it to European weather patterns. Only of basic research interest but sufficiently useful to lead to the development of the Sferics unit by Rank-Cintel. From the practical point of view the Sferics unit was huge. About 5 feet wide 5 feet tall and $2\frac{1}{2}$ feet deep and weighing an incredible amount being built like the proverbial battleship. Long gone now and replaced by the NOAA and G.M.S. satellites with their wonderfully detailed, computer processed pictures of weather systems produced almost in "real time" that we get today.

JE REC VK3CAZ.

SIGN HERE PLEASE

A new signature verification product called Sign/On is now of the market in the UK. It uses biometric measuring techniques to register many of the dynamic aspects of a signature such as the number of times the pen touches the surface, the amount of time the pen spends in the air between contacts with the surface, the pen's acceleration and deceleration and the total amount of time it takes to complete the signature. It would thus detect crude "look-alike" forgery as the probability of this being written in the same way as a genuine signature is very low.

The system works by each authorized user registering their signature. Using an electro-magnetic pen he/she signs his/her name several times on the Sign/On digitiser tablet. The signature is then stored on a statistically based template in a numbered reference file either on the system itself, or on a computer, or on an external mechanism such as SMART card or a magnetic stripe card. When the user wishes to gain access, they claim identity which causes their signature template to be loaded. They then simply sign their name again on the tablet and within three seconds Sign/On checks the written signature against the stored template.

Meter Rectifiers

Ever stopped to wonder why the makers of the AVO meter and other manufacturers of testmeters which are regarded as "standards" in the electronic world continue to use copperoxide meter/instrument rectifiers even in this day and age of semiconductor devices which according to their manufacturers claims have no flaws.

Everybody seems ready to pour scorn and derision on the humble copper - oxide rectifier generally on account of the abysmally poor p.i.v. rating and the rather poor back-to-front ratio. Admittedly the p.i.v. rating of a single element copper - oxide rectifier is only about 7 - 9 volts while the reverse-current at 5 volts can be up to 1 mA at an ambient temperature of 80 C and even at 20 C can be almost 0.5 mA. Poor characteristics indeed on the face of it but it is still widely used as it has one outstanding advantage as far as measuring instruments are concerned.

This advantage? The turn-on voltage or forward voltage drop is low indeed... At 20 C and 10mA current the forward voltage drop is only of the order of 0.1V. Since most meters don't demand anywhere near that value of current then it means that in the vast majority of cases the forward voltage drop can be ignored.

With that advantage plus the extra one that, if not seriously overloaded a "punch through" due to excessive applied voltage is self-healing to a considerable extent since oxidising is what copper will normally do if left alone. You can see why they are still used today.

Some equipment uses ceramic stand-off pillars to which are soldered wires, components etc.

The 'solderability' is due to the deposition of a thin layer of silver on the ceramic in a vacuum chamber.

Silver solders easily but does have a bad habit as far as we are concerned.

Silver has a tendency to dissolve in solder and so to migrate from the ceramic pillar/former into the solder. This migration effect tends to make it increasingly harder to solder to the termination as the deposited silver becomes less and less.

So if you are going to solder to that type of termination, do yourself a favour and buy some "silver laden solder". This is a solder of approximately 62% tin, 36% lead and 2% silver. The silver content is enough to satisfy the 'greed' of the solder and so will not cause a loss of silver from the termination. Such a solder is quite freely available and is not expensive when its value in easing a repair problem is taken into account so buy some and keep it handy for the special job.

Everybody can understand English if you say
it loud enough.

That used to be a sort of feeble excuse for not learning a foreign language a few years ago. Now it might not be necessary to raise your voice if a demonstration given by British Telecom results in a developed system. They demonstrated what was claimed to be the first instantaneous translation of speech by computer. Simple sentences in English were translated into French and vice-versa. The demonstration was between English and French Speakers, each having a microphone linked to a Merlin 5200 personal microcomputer, connected by a telephone circuit capable of handling computer data. The first participant spoke a sentence in English, saying each word clearly and deliberately. The computer repeated the sentence in its own synthetic voice to check that it had understood correctly. When this was confirmed - by saying the single word 'yes' - the originating computer then sent the message to the distant computer which translated it and spoke it in French in its own synthetic voice. When the French speaker replied the process was repeated in the reverse direction. The system is based on a set of more than 400 phrases in common business use stored in each computer's memory. Although this involves a vocabulary of more than 1000 words, the computers are programmed to recognise only 100 keywords. These are used to identify the appropriate phrases, reducing the word-recognition task required. The system also recognizes spoken names - such as John Smith, for example - and makes no attempt to translate them, e.g. rendering 'Mr White' into 'Monsieur Blanc'. Instead the names are repeated in the original speakers voice in the translation. The speech translation project is sponsored by British Telecom International who say that they see this as a stepping stone to an eventual 'dial-up translation service' in the future, but emphasise that the system is at the moment only at the research stage.

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DAVID ERIC THOMAS VK3ZL

Amateurs in Ballarat were saddened in January by the passing of one of the "Old Timers", Eric VK3ZL. Held in great affection by us all, he was licenced in the early thirties and at no time did he lose his interest in ham radio or his ability to help or pass on some of his vast knowledge gained from practical experience. A true experimenter, he built one of the first 20m rotary beams and at the same time was most successfull with 5 meters. This was later followed by the building of a latticed wind up tower and the addition of a 40 m beam, and his was a well known call from Australia. An excellent machinist, even making his own lathe as a young man, he made for instance his own co-ax connectors with the greatest of ease and precision, at the same time passing on invaluable knowledge to those seeking it. Of latter days his interest lay in the higher frequencies to 1296 m/h, and he produced many efficient rigs and beautifull aerials to go with them. All members of the Ballarat Radio Group join in extending condolences to his daughter and family and his sister.

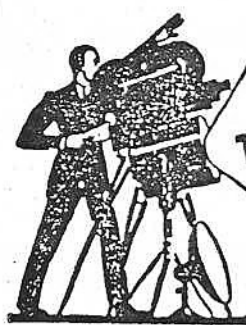
George Lance VK3DS

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